

Two Chloranthaceae leafminers of the genus *Phyllocnistis* (Lepidoptera: Gracillariidae: Phyllocnistinae) from Japan, with descriptions of new species and pupal morphology

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Abstract A new Chloranthaceae leafminer, *Phyllocnistis shizukagozen* sp. nov. (host plants: *Chloranthus serratus*, *Sarcandra glabra*) is described and *P. chlorantica* Seksjaeva, 1992 is newly recorded from Japan. Adult morphologies and life histories of the two Chloranthaceae mining species are described with photographs and illustrations. The pupal morphologies of the two species are described with the use of a scanning electron microscope. The two species have a type of mine which is new in the genus involving a change in the position of the mines, initially utilizing the lower (abaxial) epidermis, and, transferring via leaf tissue, later utilizing the upper (adaxial) epidermis; cocoons of the two species are spun on the lower epidermis.

Key words *Chloranthus japonicus*, *Chloranthus serratus*, cocoon cutter, *Phyllocnistis chlorantica*, taxonomy.

Introduction

Seven *Phyllocnistis* species have hitherto been known in Japan: *P. selenopa* Meyrick, 1915; *P. citrella* Stainton, 1856; *P. saligna* (Zeller, 1839); *P. toparcha* Meyrick, 1918; *P. hyperbolacma* (Meyrick, 1931); recently, *P. gracilistylella* Kobayashi, Jinbo & Hirowatari, 2011 was described and *P. unipunctella* (Stephens, 1834) was recorded from mainland Japan (Kobayashi *et al.*, 2011). However, some undescribed species have also been collected from several plants in Japan (Nakamura, 1993; Murase, 2005; Owada *et al.*, 2006; Arita *et al.*, 2009). Among them, the Chloranthaceae mining species was first reported by Owada *et al.* (2006) as an unidentified species, *Phyllocnistis* sp. 2, in Japan. However, *P. chlorantica* Seksjaeva, 1992 has been known from the Russian Far East as a leafminer of *Chloranthus japonicus* (Seksjaeva, 1992). As a result of our field work on the leafminers of the Chloranthaceae, the latter including two genera and four species in Japan, *Chloranthus serratus* (Thunb.) Roem. & Schult., *C. japonicus* Siebold, *C. fortunei* (A. Gray) Solms, and *Sarcandra glabra* (Thunb.) Nakai, we recognized two *Phyllocnistis* species from *Chloranthus serratus* and *C. japonicus*, respectively. In addition, according to Murase (pers. comm.), an unrecorded *Phyllocnistis* species occurs on *Sarcandra glabra* in Wakayama Prefecture, Japan.

In this paper, we describe a new species, *Phyllocnistis shizukagozen*, and a newly recorded species, *P. chlorantica* from Japan, with reports of their life histories. It is difficult to distinguish the *Phyllocnistis* species by the larval characters, but it is reported that the pupal characters are useful (Kawahara *et al.*, 2009). Therefore the present paper

also presents the pupal morphology.

Materials and methods

Study sites. Specimens were collected from March to November from 2008 to 2010 in the following prefectures: Mie (Kōchi-dani, Nabari (34°34'05"N, 136°07'14"E, 300 m; Fig. 1D)), Nara (Imai, Soni (34°31'37"N, 136°06'54"E, 650 m; Fig. 1A)) and Osaka (Mt. Mikusa, Nose (34°57'N, 135°22'E, 450–500 m)). Adult specimens were preserved in the Entomological Laboratory, Osaka Prefecture University (OPU) and Laboratory of Systematic Entomology, Hokkaido University (HU) and those collected by N. Hirano (Matsumoto) and M. Murase (Wakayama) were also examined.

Leafmine sampling and rearing. The larvae and cocoons were collected from leaves, branches, and trunks of host plant. They were reared in plastic cups (420 ml: 129π × 60H) containing wet cotton at 20 ± 5°C under photoperiod of 13~16-h light: 8~12-h dark in the laboratory. For the leafminer species, morphology of each instar and pupa was recorded.

Photography and dissection. Photographs of leafmines were taken in the field using an OLYMPUS μ1060 digital camera and some of them were scanned using EPSON GT7400. Some pupae were dried and sputter-coated with a 60:40 mixture of gold-palladium for examination with a scanning electron microscope (SEM). SEM photographs were taken using HITACHI SU1510 with a lanthanum hexaboride (LaB6) source at an accelerating voltage of 15 kV. For preparation of the male and female genitalia,



Fig. 1. Habitats and larval host plants of *Phylloconistis* species. A: Type locality of *P. shizukagozen* sp. nov., Menashi, Imai, Soni, Nara Pref., asl 650 m. B: Host plants, *Chloranthus serratus* in the type locality. C: Leaves and flowers of *C. serratus*. D: Habitats of *P. chlorantica*, Kōchidani, Shorenji, Nabari, Mie Pref., asl 300 m. E: Host plants, *C. japonicus* in Kōchidani. F: Young leaves and flowers of *C. japonicus*.

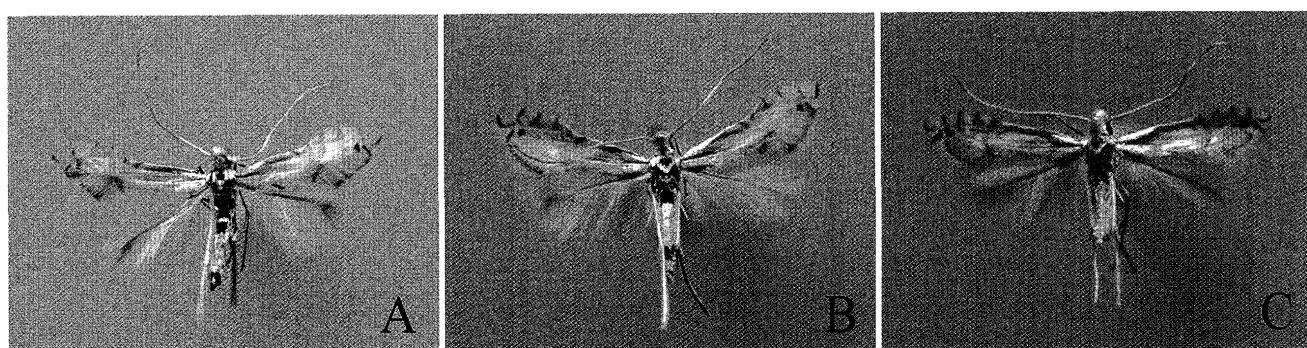


Fig. 2. Adults of Chloranthaceae mining *Phylloconistis* species from Japan. A: *P. shizukagozen* sp. nov., holotype ♂. B: Paratype, ♀. C: *P. chlorantica*.

the abdomen was removed and boiled for 3–4 minutes in 10% aqueous KOH. They were stained with acetocarmine.

Depository of specimens, nomenclature and diagnosis. All the examined specimens are deposited in OPU. Scientific names of plants follow Missouri Botanical Garden (2011). Because the present species do not show any obvious external sexual dimorphism, the specimens are treated as sex unknown when their genitalia were not dissected. The nomenclature of wing pattern follows Kawahara *et al.*, (2009: fig. 3) and genital structure follows Kuroko (1982) and Kawahara *et al.*, (2009).

Description

Diagnostic features of the Japanese Chloranthaceae mining *Phylloconistis* species are summarized in Table 1.

***Phylloconistis shizukagozen* sp. nov.** (Figs 1, 2, 13, 14, 23, 29)

(Japanese name “Futarishizuka-Kohamoguri”)

Phylloconistis sp. 2: Owada *et al.*, 2006: 51, fig. 29.

Diagnosis. Forewing silver-white suffused with golden to yellow patches, with a reverse S-shaped apical strigula

Table 1. Diagnostic features of two Chloranthaceae mining *Phyllocnistis* species in Japan.

Species name	Host plant	Adult						Pupa
		Costal strigula	Longitudinal fascia	Transverse strigula	Costal strigulae	Apical strigulae	Valva	
<i>P. shizukagozen</i>	<i>Chloranthus serratus</i> , <i>Sarcandra glabra</i>	Very slender, short	2, obscure yellow patches	Pale golden patches	3 2nd is S-shaped	2; 2nd is broadened	1 ~2.2 × length of vinculum, curved dorsally, with apex broadened	Two, dissimilar in shape
<i>P. chloranica</i>	<i>C. japonicus</i>	Slender	—	Slightly curved	3	3	2 ~2.7 × length of vinculum, slender and curved	Paired, similar in shape

(Figs 2A–B, 3A). Male genitalia with stout valva curved dorsally and broadened to apex (Fig. 4A–D) and with a U-shaped vinculum, its length half of valva. Corpus bursae with two dissimilarly sized signa; each signum with a long spine at its center (Fig. 4E).

Adult (Fig. 2A–B). Wing expanse 5.8 mm in holotype, 5.5–6.8 mm in paratypes. Frons lustrous white, upper part slightly mixed with gold. Antennae lustrous pale golden. Thorax lustrous white. Abdomen silver-grey to ocherous-grey. Anal tuft white.

Forewing (Fig. 3A). Silver-white, suffused with pale golden to yellow patches; two obscure pale golden longitudinal fascia from base to 1/2; fuscous costal strigula from 1/2 to middle sprinkled with pale golden scales; One pale golden obscure transverse fascia from costal 2/3 to dorsum 1/2; one triangular black dot at dorsum 1/2; A pale golden patch with intensely black apical spot at apex. Costal cilia white with three fuscous costal strigulae before apex; two fuscous apical strigulae, 2nd reverse S-shaped extending to apex; terminal cilia white, with a fuscous cilia line on fringe at termen. Hindwing pale grey to white; cilia white.

Male genitalia (Fig. 4A–D). Tegumen consisting of a narrow, sclerotized dorsal arch, ballooned and continuing caudally to apex, mostly membranous, enclosing tuba analis. Vinculum U-shaped, half length of valva. Valva relatively slender with a moderately broad base, dorsally curved and broadened to apex. Aedeagus simple, elongate, tapering caudally with elongate phallobase. Transtilla present. Coremata present on both sides of Segment 8.

Female genitalia (Fig. 4E). Anterior apophyses and posterior apophyses slender. Ostium bursae and ductus bursae slender, membranous; ductus bursae arising from posterior end of corpus bursae. Corpus bursae membranous, with two dissimilarly sized signa, each with a long spine at its center; small signum about 3/5 length of the large one.

Pupa (Figs 5H–J, 7). Ocherous to dark brown, 3.2–5.0 mm in length, ~0.8 mm in diameter. Vertex with a frontal process (cocoon cutter), which is stout at base and has a hair-like acute apex (Fig. 7B, E). Dorsum of A2–A7 with a pair of curved long spines with many small serrate spines medially (Fig. 7F–I). A10 with a pair of divergent swellings at caudal apex (Fig. 7J–K).

Distribution. Honshu (Iwate, Tokyo (Owada *et al.*, 2006), Nagano, Mie, Nara, Osaka and Wakayama Prefectures) and Kyushu (Fukuoka and Kagoshima Prefectures).

Host plant. *Chloranthus serratus* (Thunb.) Roem. & Schult., *Sarcandra glabra* (Thunb.) Nakai, Chloranthaceae

Material examined—57 (8♂ 6♀ 43exs)

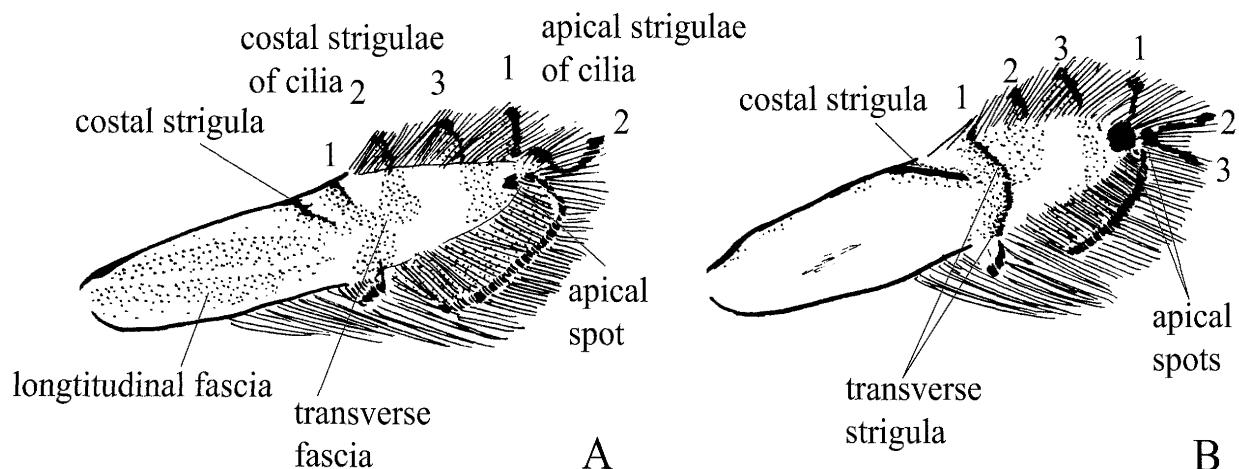


Fig. 3. Forewing fasciae and strigulae of Chloranthaceae mining *Phyllocnistis* species. A: *P. shizukagozen*. B: *P. chlorantica*.

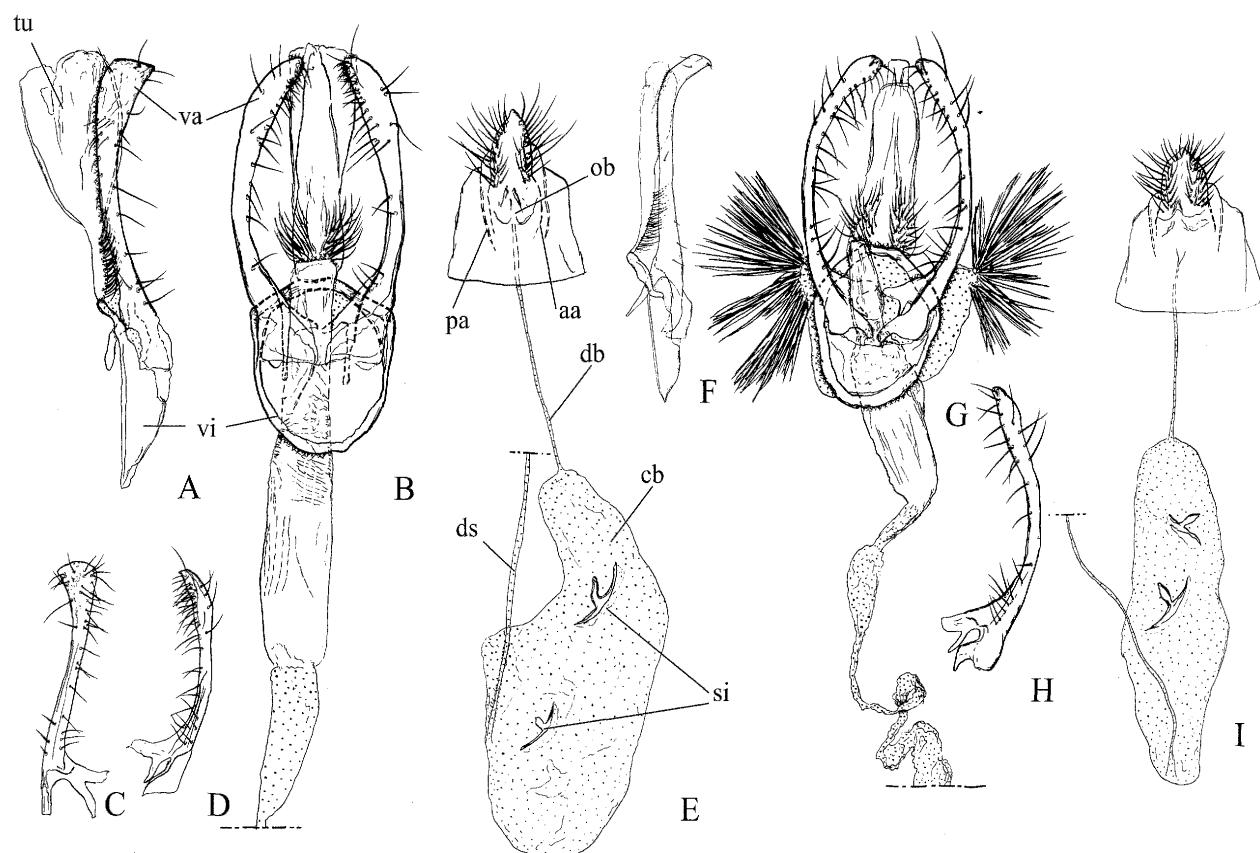


Fig. 4. The genitalia of *P. shizukagozen* and *P. chlorantica*. A-E: *P. shizukagozen*; F-I: *P. saligna*. A, F: Male genitalia (aedeagus removed), lateral view. B, G: Ventral view. C: Left valva, lateral view. D, H: Left valva, ventral view. tu: tuba analis; va: valva; vi: vinculum. E, I: Female genitalia, ventral view. aa: anterior apophyses; pa: posterior apophyses; ob: ostium bursae; db: ductus bursae; cb: corpus bursae; si: signa; ds: ductus seminalis.

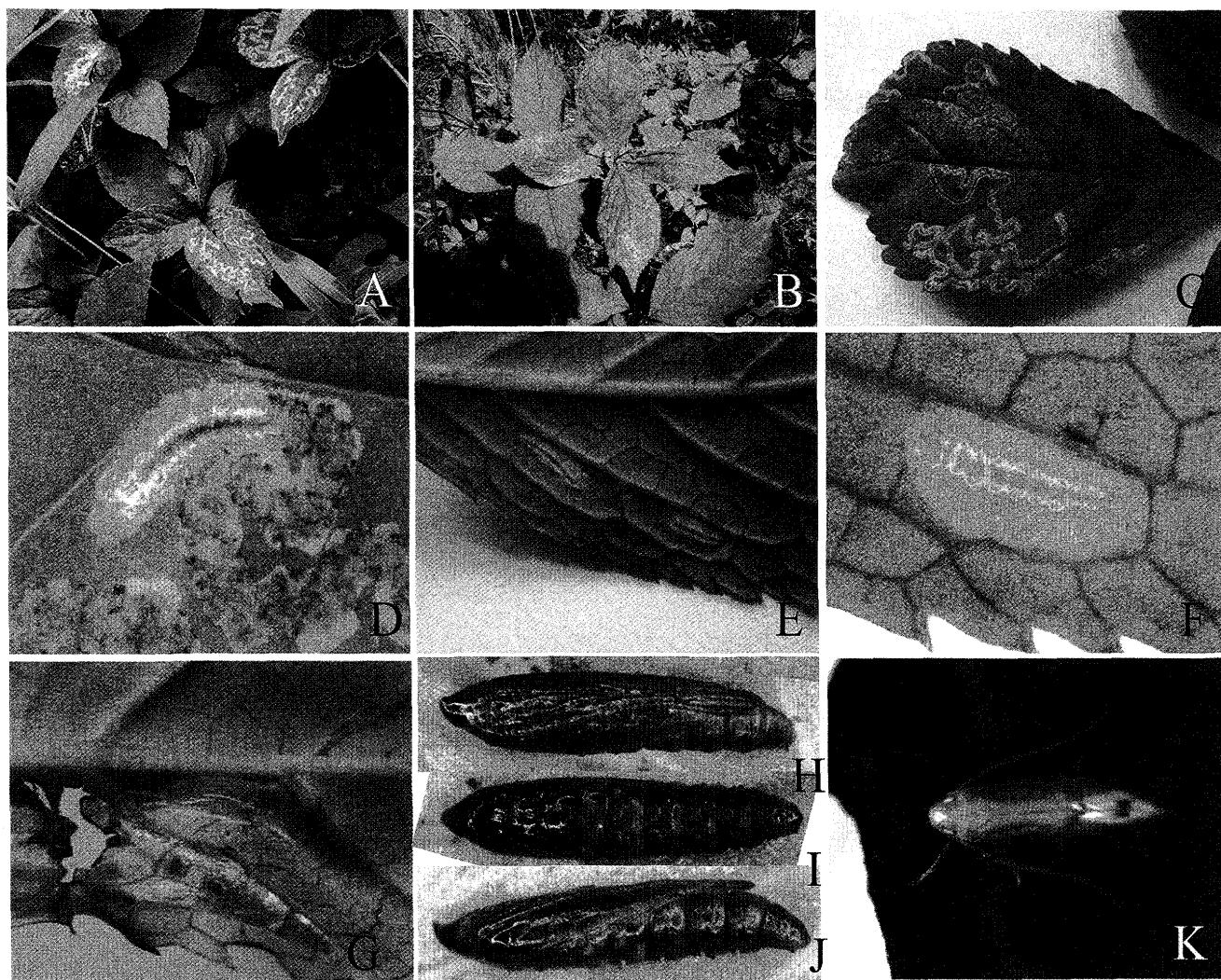


Fig. 5. Biology of *Phyllocoptis shizukagozen* and the host plant, *Chloranthus serratus*. A, B: Mine of upper epidermis by later larvae. C: Leaves and leafmines of later larvae. D: Later instar larva on upper epidermis. E: Penultimate sap-feeding instar larvae on lower epidermis. F: Final spinning instar larva. G: Pupal cocoon fold on lower epidermis. H: Pupa, ventral view. I: Dorsal view. J: Lateral view. K: Resting posture of the adult.

Type Material. Holotype ♂, JAPAN: Honshu: Menashi, Imai, Soni, Uda, Nara Pref., 20. vi. 2008 em., Host: *Chloranthus serratus* 14. vi. 2008 (larva), S. Kobayashi (genitalia slide no. OPU-SK316). Paratypes 7♂6♀43exs. [Host: *Chloranthus serratus*]: Iwate Pref.: 1ex, Tsunagi, 11. x. 1975 em. (H. Kuroko), 28. ix. 1975. Nagano Pref.: [N. Hirano leg.]: 1ex, Mizusawa, Hata, 28. ix. 2005 em., 10. ix. 2005 (larva); 2exs, Ueno, Matsumoto, 25–26. vi. 2006 em., 17. vi. 2006 (larva). Nara Pref.: [Menashi, Imai, Soni, Uda, S. Kobayashi leg.]: 2♂2♀2exs, 15–16. vi. 2008 em., 7. vi. 2008 (larva); 1exs, Saijyobo, Imai, 18. vi. 2008 em., 14. vi. 2008 (larva); 1♂2♀7exs, 20–26, 29. vi. 2008 em., 14. vi. 2008 (larva); 2♀5exs, 19–21, 24, 26. vii. 2008 em., 5. vii. 2008 (larva); 1♀1ex, 25. vii. 2008 em., 6. vii. 2008 (larva); 1♀1ex, 25. vii. 2008 em., 6. vii. 2008 (larva); 1♂2exs, 21 & 30 vii. 2010 em., 19. vii. 2010

(larva). Fukuoka Pref.: [Hikosan, H. Kuroko leg.]: 1ex, 24. x. 1953; 1♂14exs, 14–24. vi. 1955; 1ex, 23. vii. 1955. Kagoshima Pref.: 1ex, Sata-Misaki, 21. v. 1952 (S. Issiki); 4exs, Same locality, 21–22, 28. iv. 1956 (H. Kuroko).

[Host: *Sarcandra glabra*]: Wakayama Pref.: 1♂1♀, Nachisan, Nachikatsuura, 2–3. iii. 2007 em. (M. Murase), 24. xii. 2007. All materials are deposited in OPU.

Etymology. The specific epithet, *shizukagozen*, is named after Shizuka-gozen who is a historical Japanese woman, because it is said that the Japanese name of the host plant “Futari-shizuka” was derived from her name and her dancing image.

Biology (Figs 5, 9A–B). Murase (pers. comm.) collected and reared the larvae from *Sarcandra glabra* in Wakayama

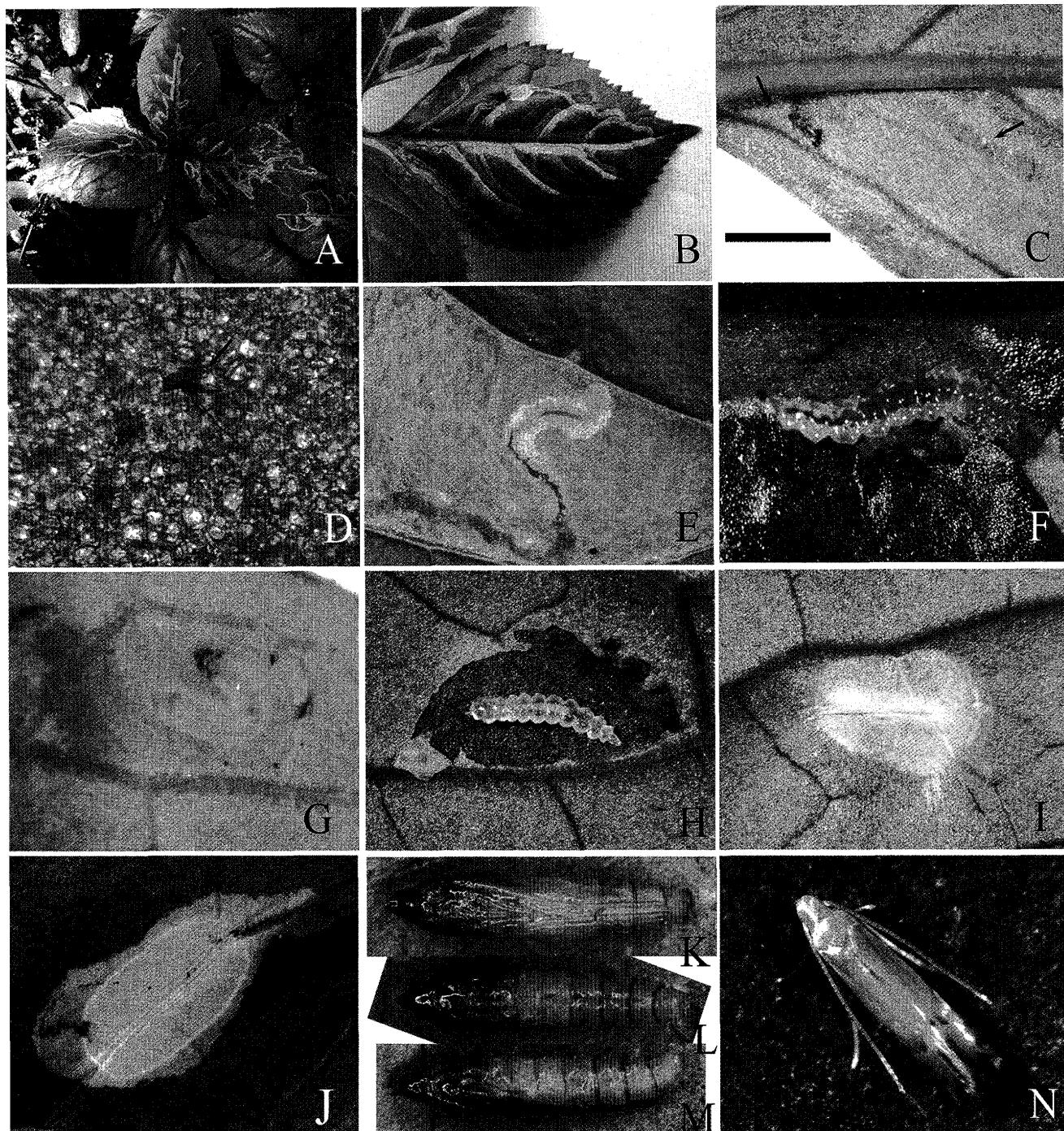


Fig. 6. Biology of *Phylloconistis chlorantica* and Host plant, *Chloranthus japonicus*. A: Mine of upper epidermis by later larvae. B: Leaves, leafmines and pupal cocoon fold. C: Mine of lower epidermis. Left arrows showing end of lower mine; right showing head capsule; black bar showing length of 1 mm. D: Head capsule on lower mine. E, F: Later instar larva on upper epidermis. G, H: Final spinning instar larva. I: Pupal cocoon fold on lower epidermis. J: Pupal cocoon fold on upper epidermis. K: Pupa, ventral view. L: Dorsal view. M: Lateral view. N: Resting posture of the adult.

Prefecture. We were able to observe the larvae of this species only on *Chloranthus serratus*. This species has a few generations per year. The larvae emerged from June to October in Nara Prefecture. The Menashi, Imai, Soni (type locality of *P. shizukagozen*) is a planted forest of

Japanese cedar and cypress with many host plants on the forest floor (Fig. 1A–C), in an area close to a tiny stream with a small alder thicket.

Although the larval instars are indistinct, presumably the

first to third instars are sap-feeding leafminers. The first instar larva mines the lower (abaxial) epidermis forming an undulating mine (~100 mm in length, 0.3–0.4 mm in width, without distinct frass line). After the first moult, the second instar transfers from the lower to the upper (adaxial) epidermis via the leaf tissue.

The second to third instars form an elongate tortuous, serpentine mine in the upper epidermis (~1.0–2.0 mm in width, frass line: 0.1 mm in width); 1–4 mines were usually observed in a leaf (Fig. 5A–C). The later larva is 3–4 mm in length and pale yellow (Fig. 5D). The later (presumably third instar) larva transfers to the lower epidermis via leaf tissue and after the moult the final instar spins the cocoon (Fig. 5E–F). The cocoon is about 3–4 mm in length, 1.2–1.5 mm in width, pale yellow to white and ellipsoidal in shape with a fine central line on the lower side of the leaf. (Fig. 5G).

Remarks. This new species is distinguishable from *P. chlorantica* and other species by having a golden to yellow disk at base to 1/2 in the forewing, a stout, curved valva and a U-shaped vinculum. In the garden of the Imperial Palace of Tokyo, Owada *et al.* (2006) collected mines and cocoons and recorded the species as *Phyllocnistis* sp. 2, “Futarishizuka-Kohamoguri” and noted some aspects of their biology. Although the genitalia of these moths were not examined, we regard “Futarishizuka-Kohamoguri” as conspecific with *P. shizukagozen* because of the similar forewing pattern (Owada *et al.*, 2006: fig. 29).

***Phyllocnistis chlorantica* Seksjaeva** (Figs 2C, 3B, 4F–I, 6, 8, 9C–D)

(Japanese name “Hitorishizuka-Kohamoguri”)

Phyllocnistis chlorantica Seksjaeva, 1992: 2: 426–427, fig. 6; Seksjaeva, 1997: 429, fig. 296(7); Kuznetsov & Baryshnikova, 2001: 116, fig. 7(3).

Phyllocnistis sp.: Kumata, 1998: Pl. X: Fig. 21C–D.

Diagnosis. Forewing lustrous-white with two apical spots, without longitudinal strigula (Figs 2C, 3B). Male genitalia with slender and slightly curved valva; vinculum semicircular, 2/5 length of valva (Fig. 4F–H). Corpus bursae with two equal sized signa, each signum with a spine at its center (Fig. 4I).

Adult (Fig. 2C). Wing expanse 5.5 mm in Japanese specimens.

Male genitalia (Fig. 4F–H). See Seksjaeva (1992).

Female genitalia (Fig. 4I). Anterior apophyses and posterior apophyses relatively short and slender. Ostium bursae and ductus bursae slender, membranous; inception of ductus bursae arising from posterior end of corpus bursae. Corpus

bursae relatively small with two equal sized signa; each signum with a spine at its center.

Pupa (Figs 6K–M, 8). Ocherous to brown, 2.5–3.5 mm in length, ~0.8 mm in diameter. Vertex with a triangular, apical acute frontal process (cocoon cutter) (Fig. 8B, E). Dorsum of A2–A7 with a pair of curved long spines and with many serrate small spines medially (Fig. 8F–J). A10 with a pair of divergent swellings at caudal apex (Fig. 8K–L).

Distribution. Hokkaido, Honshu (Nagano and Mie Prefectures), Kyushu (Fukuoka Pref.); Russia Far east (Seksjaeva, 1992).

Host plant. *Chloranthus japonicus* Siebold, Chloranthaceae

Material examined—103 (3♂ 3♀ 97exs)

Hokkaido: [T. Kumata leg.]: [Sapporo]: 2exs, 14. vii. 1956 em., 28. vi. 1956 (HU); 1ex, 19. vii. 1957 (HU); 2exs, 15 & 17. vii. 1964 (HU). Nagano Pref.: [N. Hirano leg.]: 2exs, Mizusawa, Hata-machi, 16. vii. 1999 em., 4. vii. 1999 (pupa); 1ex, Ueno, Matsumoto, 11. vii. 2006 em., 17. vi. 2006 (pupa). Mie Pref.: [S. Kobayashi leg.]: [Kōchidani, Shorenji, Nabari]: 3♂ 3♀ 67exs, 13–14, 16–22, 25–26. vi. 2009 em., 7. vi. 2009 (larva); 2exs, 16. vi. 2009 em., 7. vi. 2009 (larva, cocoon fold on the adaxial side); 2ex, 21. vi. 2009 em., 13. vi. 2009 (larva); 2exs, 23–24. vi. 2010 em., 5. vi. 2010 (larva). 1ex, Momiji-dani, Shorenji, Nabari, 23. vi. 2010 em., 12. vi. 2010 (larva). Fukuoka Pref.: [Hikosan, H. Kuroko leg.]: 8exs, 19–21, 30. iv. 1954; 3exs, 1–2, 6. vii. 1954; 1ex, 16. iv. 1955; 3exs, 3–4. vii. 1955. (OPU).

Biology (Figs 6, 9C–D). This species was easily collected from host plants in Kōchi-dani, Nabari, Mie Prefecture. In Kōchi-dani, the host plants are usually found in a small area between forest and road edge: they came into flower in April and many leafmines were observed in early June (Fig. 1D–F). This species has at least one generation per year. The larvae emerged in June in Mie Prefecture. The larval instars were not distinct, but presumably first to third instar larvae are sap-feeding leafminers, and mine in the same manner as in *P. shizukagozen*; the first instar mines are formed on the lower epidermis (~100 mm in length, 0.3–0.4 mm in width, without distinct frass line) (Fig. 6C); second and third instar mines on the upper epidermis (~200–300 mm in length; ~0.5–1.3 mm in width; frass line: 0.1 mm in width); 1–3 mines were usually observed in a leaf (Fig. 6A–B). Occasionally some later larvae did not transfer to the lower side and spun cocoons in situ on the upper side (Fig. 6B, J). The cocoon is about 5 mm in length, 2.5 mm in width, pale yellow to white and ellipsoidal in shape with a fine central line (Fig. 6I–J).

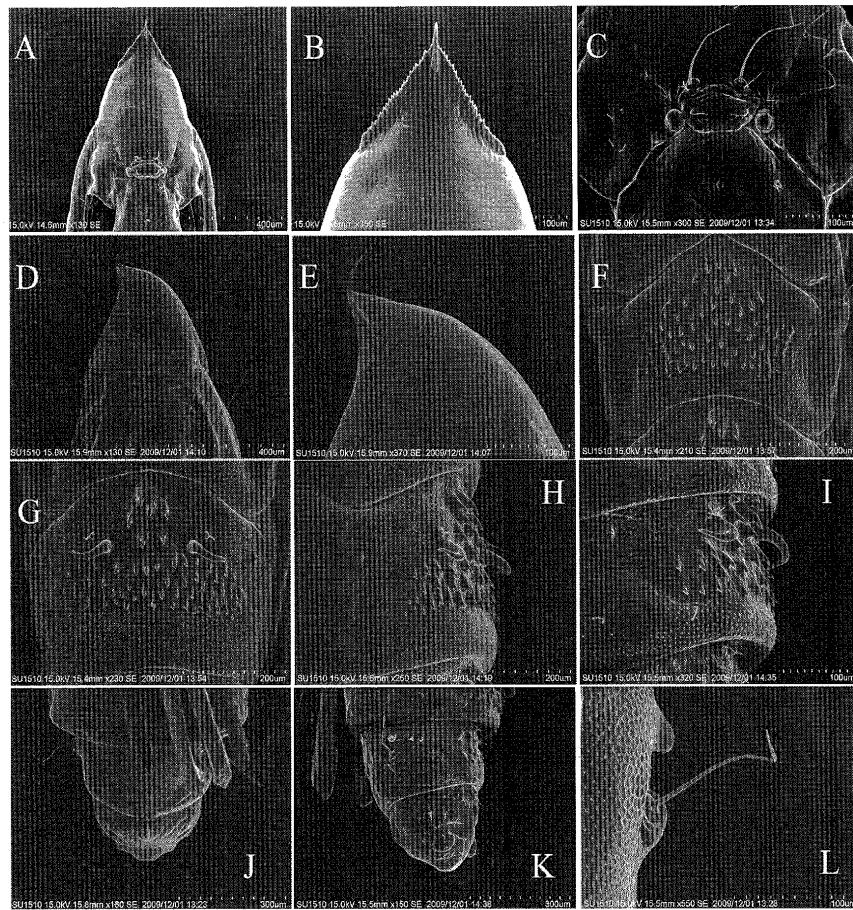


Fig. 7. Pupa of *Phyllocnistis shizukagozen*. A: Head, ventral view. B: Cocoon cutter, ventral view. C: Frons. D: Head, lateral view. E: Cocoon cutter, lateral view. F: Spines on third abdominal tergum. G: Spines on fourth abdominal tergum. H: Lateral view of G. I: Spines on sixth abdominal tergum, lateral view. J: A8-A10, ventral view. K: Lateral view. L: Lateral seta on A8.

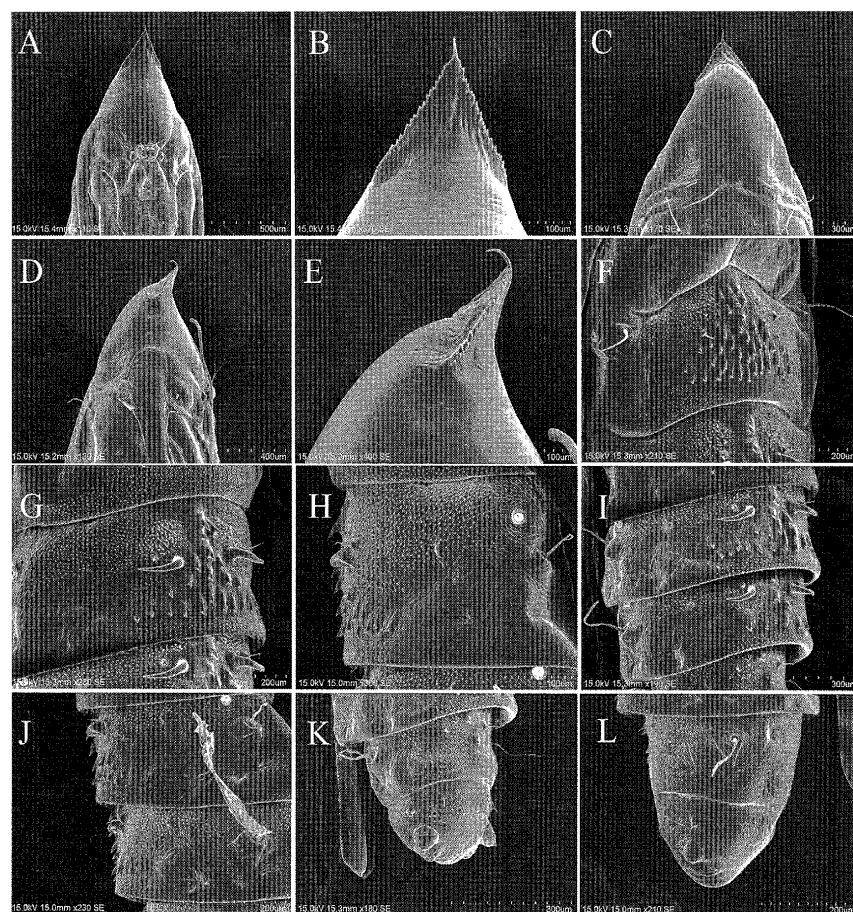


Fig. 8. Pupa of *Phyllocnistis chlorantica*. A: Head, ventral view. B: Cocoon cutter, ventral view. C: Head, dorsal view. D: Head, lateral view. E: Cocoon cutter, lateral view. F: Spines on third abdominal tergum. G: Spines on fifth abdominal tergum. H: Spines on fourth abdominal tergum, lateral view. I: Spines on sixth and seventh abdominal tergum. J: Lateral view of I. K: A8-A10, ventral view. L: Lateral seta on A8.

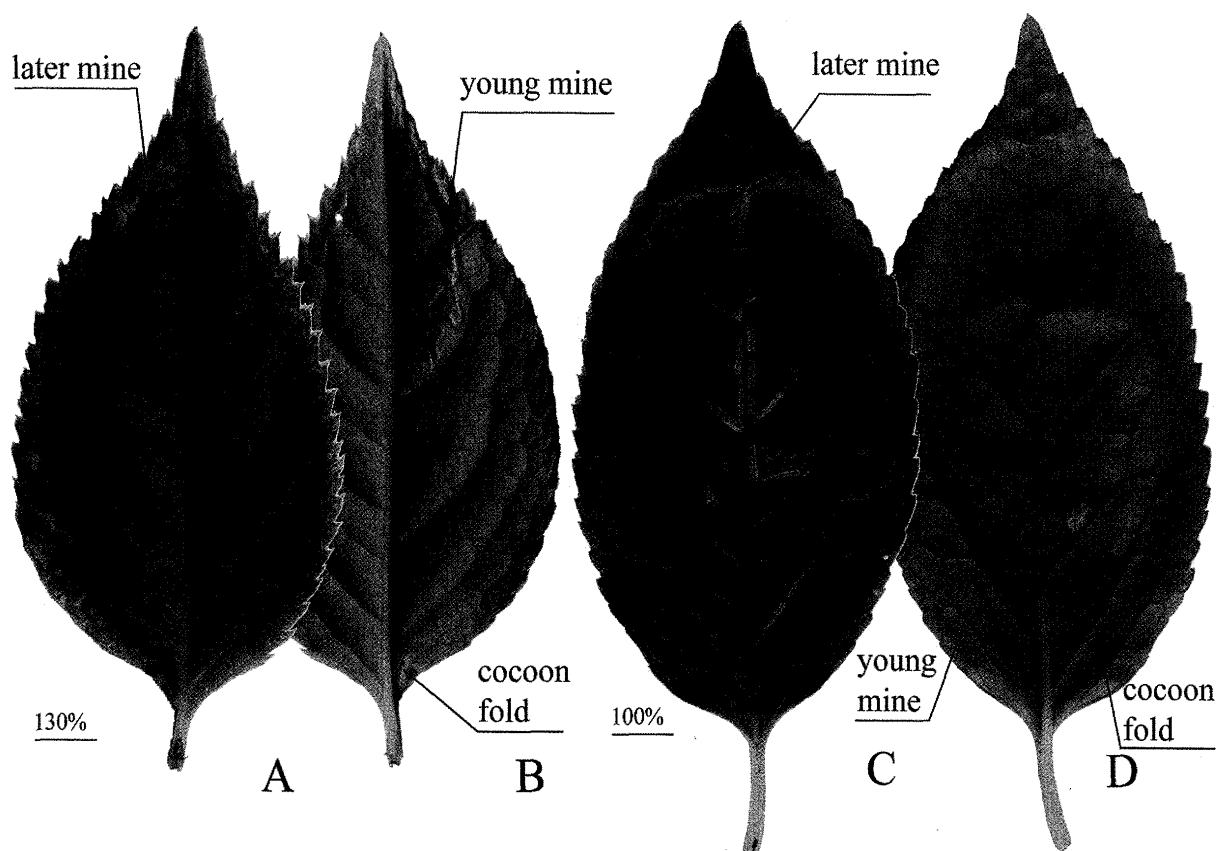


Fig. 9. Host plants and biology of the immature stage of *Phylloconistis shizukagozen* and *P. chlorantica*. A, B: *P. shizukagozen* on the leaf of *Chloranthus serratus*. C, D: *P. chlorantica* on the leaf of *C. japonicus*. A, C: Upper side of leaf. B, D: Lower side of leaf. Left and central below percent terms showing scale size.

Remarks. The forewing pattern of this species is similar to that of *P. unipunctella* (Stephens, 1834). But it is distinguishable from other congeners by having two apical spots and by the absence of any longitudinal fascia or strigula.

Larvae of *Phylloconistis* species mostly utilize only one side (upper or lower) of the epidermis of the leaf, forming a serpentine mine. Furthermore it has been known that the Salicaceae mining *Phylloconistis* species utilize the stem, the leaf and, partl, the leaf edge in the cocoon stage (Kobayashi *et al.*, 2011). In the present study, we found *Phylloconistis shizukagozen* and *P. chlorantica* have a mining type new for the genus. The mining type of the two species has the following new characteristics: 1) definite utilization of both sides of the epidermis of the leaf during the larval stage; 2) transfer via leaf tissue at a young larval stage and before the cocoon stage; 3) pupal cocoon fold mostly spun on the lower epidermis.

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摘要

センリヨウ科の葉に潜るコハモグリガ属の1新種1新記録種の記載および蛹の形態（小林茂樹・広渡俊哉）
コハモグリガ属 *Phyllocnistis* (ホソガ科コハモグリガ亜科) は、幼虫が葉やまれに茎の表皮にもぐる潜葉性の小蛾類で、成虫は開張4–8 mm, 世界におよそ90種が、日本では7種

が知られる。本属には多くの学名未決定種の報告があり、皇居の蛾類調査によってフタリシズカの葉に潜るフタリシズカコハモグリ *Phyllocnistis* sp. 2 が同じくセンリヨウ科のヒトリシズカに潜る *P. chlorantica* Seksjaeva, 1992 とは別種として報告されていた（大和田ら, 2006）。そこで本研究は、センリヨウ科に潜るコハモグリガの形態・生活史の解明に努めた。

その結果、フタリシズカとセンリヨウの葉に潜る1新種、ヒトリシズカの葉に潜る1新記録種の計2種をセンリヨウ科から認めた。フタリシズカコハモグリ（新種）*Phyllocnistis shizukagozen* sp. nov. とヒトリシズカコハモグリ（新称）*P. chlorantica* Seksjaeva, 1992 の幼虫・蛹を観察し、蛹の形態を記載した。新種とヒトリシズカコハモグリの2種は、前翅斑紋・雌雄交尾器などの形態形質で別種であることが支持されたが、蛹のコクーンカッターの形態はよく似ていた。

両種は、若齢期に葉の裏側表皮に潜り、2齢に脱皮後、葉組織を通じて表側表皮に移動して葉を食べ進む。その後、終齢の直前に表側表皮から裏側表皮に移動しマユを作り蛹になった。このような潜葉習性をもつコハモグリガ属の種はこれまで知られていなかった。

1. *Phyllocnistis shizukagozen* Kobayashi & Hirowatari sp. nov.
フタリシズカコハモグリ（新種）(Figs 2A–B, 3A, 4A–E, 5, 7, 9A–B)

開張5.5–6.8 mm。前翅は銀白色で翅中央に基部から黄金色の不明瞭な帯が2つ走り、縁毛の頂点の斜条はS字形になる。雄交尾器のバルバは、先端が幅広くなる。雌交尾器のシグナは2個でそれぞれ大きさが異なる1本の突起を有する。蛹のコクーンカッターは、三角錐形で先端が針状になる。幼虫は6月から10月にフタリシズカの葉に若齢時は裏側表皮に極細の線状潜孔を作り、2齢に脱皮後、葉の組織を通じて表側表皮に移り蛇行した線状潜孔を作る。その後、再び裏側表皮に移り、終齢に脱皮後、マユを作り蛹になる。分布：本州（岩手、東京、長野、三重、奈良、大阪、和歌山）、九州（福岡、鹿児島）。寄主植物：フタリシズカ、センリヨウ（センリヨウ科）。

2. *Phyllocnistis chlorantica* Seksjaeva, 1992 ヒトリシズカコハモグリ (Figs 2C, 3B, 4F–I, 6, 8, 9C–D)

開張5.5 mm。前翅は銀白色で翅中央の縦帯を欠き、翅頂点に2つの黒点を有する。雄交尾器のバルバは、細く内側に曲がる。雌交尾器のシグナは一対で、それぞれ1個の突起を有する。蛹のコクーンカッターは、前種と似るがより鋭角な三角錐形。幼虫は、6月にヒトリシズカの葉に線状に潜る。潜葉習性はフタリシズカコハモグリと同様である。例外的に、裏側に移らず、表側表皮にマユを作り蛹になる個体も観察された。分布：北海道、本州（長野、三重）、九州（福岡）；ロシア極東。寄主植物：ヒトリシズカ（センリヨウ科）。

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